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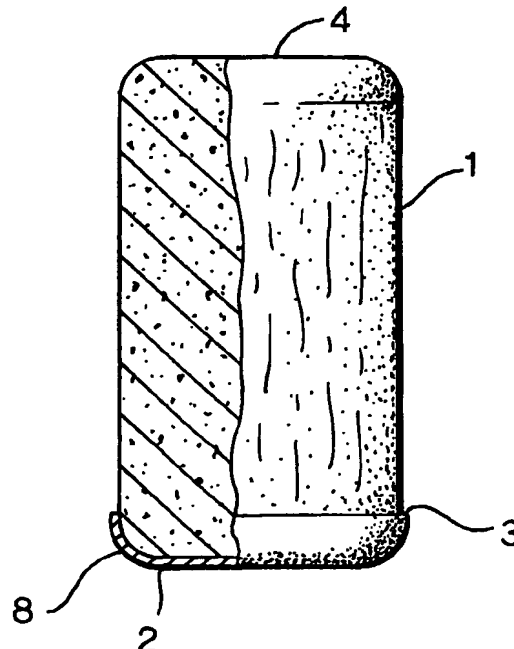
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- (71) Applicant (for all designated States except US): **BACCHUS WINE CLOSURES LIMITED** [GB/GB]; Cider Mill, Fair Oaks Farm Hollybush, Ledbury, Herefordshire HR8 1EU (GB).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **TAYLOR, David, Graham** [GB/GB]; Cider Mill, Fair Oaks Farm Hollybush, ledbury, Herefordshire HR8 1EU (GB).
- (74) Agent: **SMAGGASGALE, Gillian, Helen**; W.P. Thompson & Co, 55 Drury Lane, London WC2B 5SQ (GB).
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(54) Title: STOPPERS



(57) Abstract: A stopper, particularly for a wine bottle, comprising a barrier layer comprising a hot melt polymeric adhesive and optionally at least one sub-layer having lower oxygen permeability than the hot melt adhesive.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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(71) Applicant (for all designated States except US): **BACCHUS WINE CLOSURES LIMITED** [GB/GB]; Cider Mill, Fair Oaks Farm Hollybush, Ledbury, Herefordshire HR8 1EU (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **TAYLOR, David, Graham** [GB/GB]; Cider Mill, Fair Oaks Farm Hollybush, ledbury, Herefordshire HR8 1EU (GB).

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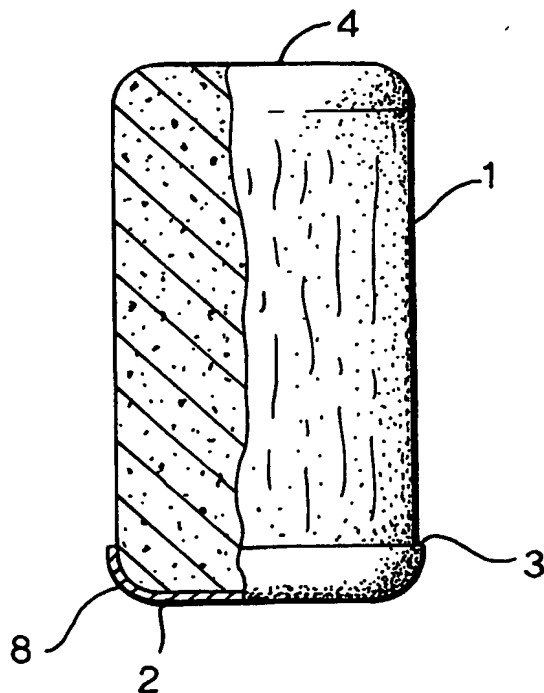
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(54) Title: STOPPER



(57) Abstract: A stopper (1), particularly for a wine bottle, comprising a barrier layer (3) comprising a hot melt polymeric adhesive and optionally at least one sub-layer having lower oxygen permeability than the hot melt adhesive.

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INTERNATIONAL SEARCH REPORT

International Application No
PC 03/00939

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B65D39/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B65D B65G B27K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	WO 00 64647 A (VINPAC INTERNAT PTY LTD ;MA ROSALIND (AU); WILKS TERRY (AU); BRITC) 2 November 2000 (2000-11-02) page 1, line 1 - line 5 page 3, line 5 - line 8 page 3, line 15 - line 17 page 4, last paragraph page 5, line 19 - line 20 page 9, paragraph 1 page 11, line 1 - line 9 page 14, last paragraph; claims 1-3,5,6 — -/-	1,9-11, 22,23, 25-28, 30,32,40 14,17

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
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- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

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- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Janosch, J

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 Int. Patent Application No.
 P. B. 03/00939

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 64649 A (VINPAC INTERNAT PTY LTD ;MA ROSALIND (AU); WILKS TERRY (AU); BRITC) 2 November 2000 (2000-11-02) page 1, line 1 - line 6 page 1, line 18 - line 20 page 7, line 9 - line 14 page 8, line 19 - line 21 page 13, paragraph 1; claims 1-3,8	1,9-11, 22,23, 25-28, 30,32,40
A	----- US 5 527 580 A (AOKI YOSHIHIDE ET AL) 18 June 1996 (1996-06-18) column 3, line 13 - line 29 column 3, line 41 - line 44 column 5, line 6 - line 9; claims 1-5; figures 1-5	14,17
X	PT 95 130 A (SOBERANA CORTICEIRA SA) 28 February 1992 (1992-02-28)	1,6,7, 11,14, 17,19,21
A	page 1, line 14 - line 30; claims 1-3	9,16,28
X	FR 1 022 562 A (MAZZONI LUCIEN) 6 March 1953 (1953-03-06) page 2, line 3 - line 20 page 2, line 34 - line 37; claim 1; figure 3	1,15, 26-28 9,14,17
A	----- EP 0 205 312 A (NITTO ELECTRIC IND CO ;DAIKYO GOMU SEIKO KK (JP)) 17 December 1986 (1986-12-17) page 1, line 2 - line 5 page 3, line 15 - line 23; claims 1,4,5; figures 3,4	1,11,14, 19,21, 26,27
X	DE 39 40 461 A (PFEFFERKORN & CO) 13 June 1991 (1991-06-13) cited in the application	9,17,28
A	----- column 2, line 43 - line 53 column 2, line 65 - column 3, line 1 column 3, line 56 - line 65; claims 1,5,6,12; figures 1-3 ----- -/--	1,6-8,21 9,37-39
X	DE 39 40 461 A (PFEFFERKORN & CO) 13 June 1991 (1991-06-13) cited in the application	1-5,11, 14-16, 18,19, 22,23, 26,27, 30,31, 33-36 9,24,28
A	column 2, line 43 - line 53 column 2, line 65 - column 3, line 1 column 3, line 56 - line 65; claims 1,5,6,12; figures 1-3 ----- -/--	

INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT.

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 42 25 092 A (KESSLER REINHARD) 4 February 1993 (1993-02-04) cited in the application	1-7,9, 11,14, 15, 18-20, 22,23, 25-27, 30-37,40 9,24,28
A	column 2, line 28 - line 44 column 2, line 61 - line 63 column 4, line 20 - line 28 column 4, line 46 - line 47; claims 1-4; figures 1,2,6-9	
X	DE 19 42 494 A (DYNAMIT NOBEL AG) 4 March 1971 (1971-03-04)	1,19,21
A	page 2, line 6 - line 13 page 2, last paragraph page 5, last paragraph page 6, line 1 - line 9; claims 1-3,9; figure 3	9
P,X	WO 03 004367 A (PROCEL PTY LTD ;MATHESON NORMA CATHERINE (AU)) 16 January 2003 (2003-01-16) page 12, line 9 - page 13, line 12 page 13, line 24 - line 26 page 19, line 12 - line 14; claims 2,5-10,12,14-22,26,27,35; figures 1-9	1,6-11, 14-16, 19,21
P,X	EP 1 270 703 A (HENKEL KGAA) 2 January 2003 (2003-01-02)	1,15,18, 19, 26-28,41 9,17
A	column 1, line 8 - line 17 column 1, line 42 - line 46 column 3, line 6 - line 34 column 3, line 47 - line 54; claims 3,4	
X	DE 889 221 C (BRODHAGE KORKEN UND KORKWARENF) 7 September 1953 (1953-09-07) page 2, line 4 - line 40; claim 1	41
X	EP 0 927 613 A (NERI F & C S N C) 7 July 1999 (1999-07-07) column 3, line 22 - line 30; claim 1	42
Y	PATENT ABSTRACTS OF JAPAN vol. 017, no. 316 (M-1430), 16 June 1993 (1993-06-16) -& JP 05 031831 A (NAGAYANAGI KOGYO KK), 9 February 1993 (1993-02-09)	41
A	abstract; figures 1,2,5,6	42
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INTERNATIONAL SEARCH REPORT

International Application No

P/B 03/00939

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 018 337 A (CARTER DAVID G ET AL)	41
A	28 May 1991 (1991-05-28) column 2, line 22 - line 24 column 2, line 45 - line 49; claim 4 -----	42

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 03/00939

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-40

Invention 1 - Claims 1-40: A stopper comprising a barrier layer which comprises a hot melt polymeric adhesive.

2. Claim : 41

Invention 2 - Claim 41: A method of applying a pre-polymer to a stopper comprising: forming a pre-polymer by combining an isocyanate solution with a polyol solution; applying the pre-polymer to a surface of the stopper; and allowing the pre-polymer to cure.

3. Claim : 42

Invention 3 - Claim 42: A method of applying a barrier layer to a stopper comprising: applying hot melt adhesive to one of a stopper and a partially formed barrier layer; allowing the hot melt adhesive to cool; and contacting the stopper and the barrier layer such that bonding occurs.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP 03/00939

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0064647	A	02-11-2000	WO 0064647 A1 AU 3949200 A	02-11-2000 10-11-2000
WO 0064649	A	02-11-2000	WO 0064649 A1 AU 3949400 A EP 1173313 A1	02-11-2000 10-11-2000 23-01-2002
US 5527580	A	18-06-1996	JP 3140231 A EP 0450096 A1 WO 9106276 A1 KR 138514 B1	14-06-1991 09-10-1991 16-05-1991 27-04-1998
PT 95130	A	28-02-1992	NONE	
FR 1022562	A	06-03-1953	NONE	
EP 0205312	A	17-12-1986	JP 1817336 C JP 5027536 B JP 61277445 A EP 0205312 A1	18-01-1994 21-04-1993 08-12-1986 17-12-1986
DE 3940461	A	13-06-1991	DE 3940461 A1	13-06-1991
DE 4225092	A	04-02-1993	DE 4225092 A1	04-02-1993
DE 1942494	A	04-03-1971	DE 1942494 A1	04-03-1971
WO 03004367	A	16-01-2003	WO 03004367 A1	16-01-2003
EP 1270703	A	02-01-2003	DE 10130887 A1 EP 1270703 A2 US 2003114626 A1	16-01-2003 02-01-2003 19-06-2003
DE 889221	C	07-09-1953	NONE	
EP 0927613	A	07-07-1999	IT T0971147 A1 EP 0927613 A2	30-06-1999 07-07-1999
JP 05031831	A	09-02-1993	NONE	
US 5018337	A	28-05-1991	GB 2233657 A , B	16-01-1991